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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,256	01/26/2004	Srikanth Varanasi	1-15610	9581
1678	7590	04/18/2006	EXAMINER	
MARSHALL & MELHORN FOUR SEAGATE, EIGHT FLOOR TOLEDO, OH 43604			CHEN, BRET P	
			ART UNIT	PAPER NUMBER

1762

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/765,256

Applicant(s)

VARANASI ET AL.

Examiner

B. Chen

Art Unit

1762

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-20 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

Claims 1-20 are pending in this application. Amended claim 16 and canceled claims 21-26 are noted.

The amendment dated 2/3/06 has been entered and carefully considered. The examiner appreciates the amendment to the claims. In view of said amendment, the 102 art rejection has been withdrawn.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens et al. (5,686,178) for the reasons listed in the previous office action.**

In amended independent claim 16, the applicant requires the mixing of the ferrocene and an oxidant. It is noted that Stevens teaches that a organoiron gas mixture can be utilized to deposit elemental iron (col.16 lines 15-37). One skilled in the art would realize the ferrocene and oxidant could be mixed to form the iron oxide coating with the expectation of success. Hence, it would have been obvious to mix ferrocene and an oxidant with the expectation of success.

The limitations of claims 17-20 have been addressed previously.

**Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (4,027,056) in view of Stevens et al. (5,686,178).** Thompson discloses a method of fabricating an iron oxide film on a substrate by decomposing polyvinyl ferrocene in an oxidizing

Art Unit: 1762

environment (col.2 lines 17-27). The carbon to iron ratio can be varied (col.4 lines 44-47) and a thickness of 400 angstroms can be achieved (col.6 lines 44-53). However, the reference fails to teach a gas mixture.

Stevens discloses a method of forming an iron oxide coating by reacting ferrocene as noted above. Stevens specifically teaches that a organoiron gas mixture can be utilized to deposit elemental iron (col.16 lines 15-37). It would have been obvious to utilize a gas mixture as taught by Stevens in the process of Thompson with the expectation of success.

The limitations of claims 17-20 have been addressed above.

### ***Response to Arguments***

Applicant's arguments filed 2/3/06 have been fully considered but they are not persuasive.

Applicant first argues that Stevens teaches forming a metal layer on a substrate which is later oxidized when exposed to the atmosphere which differs from the claimed invention of forming an iron oxide coating (p.12).

The examiner disagrees. It is noted that independent claim 1 simply requires providing a heated substrate, directing the ferrocene and an oxidant along the substrate surface, and reacting the ferrocene and an oxidant to form an iron oxide coating. This actually reads on forming a metal layer and oxidizing the metal coating as there is no recitation in the instant claims that the ferrocene and the oxidant are simultaneously directed. It is the examiner's position that the instant claim as presently written does not preclude the sequential insertion of the precursors.

Art Unit: 1762

Applicant next argues that the use of hydrogen as a carrier gas would not be suitable as in would not be classifiable as inert (p.13).

The examiner agrees in part. While the examiner concedes that hydrogen is not always inert, it is noted that hydrogen is utilized as a carrier gas. Applicant has not provided any factual evidence showing that either hydrogen is not inert in the prior art reference. Hence, the applicant's assertion that hydrogen is not inert appears to be mere speculation in the absence of a showing of factual evidence.

Applicant next argues that the deposition rate of the iron oxide layer is not taught because of the conversion of metal to metal oxide (p.13).

The examiner disagrees. The issue of conversion has been addressed above.

Applicant next argues that the reference does not teach an on-line float glass production process (p.13).

The examiner agrees in part. However, it is noted that the reference clearly teaches of using a glass substrate. One skilled in the art would reasonably expect that a substrate from a float glass process would produce similar results in the absence of a showing of unexpected results. It is noted that no factual evidence to support unexpected results has been provided.

Applicant's arguments have been considered but are not deemed persuasive.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1762

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to B. Chen whose telephone number is (571) 272-1417. The examiner can normally be reached on 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bc  
4/15/06

  
BRET CHEN  
PRIMARY EXAMINER